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Health and Disease on the Western Frontier

A Bicentennial Appreciation

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THE YEAR of our national bicentennial is a time for celebrating the many features of our history. Colonial medicine is drawing the most attention from the historians of medicine, justifiably I suppose, because it is now 200 years of age. But colonial medicine was European medicine, especially British. If one wishes to celebrate our heritage, it is the medicine of the frontier, as it moved progressively westward, that is uniquely American. As the earliest Americans believed some of their diseases and their cures to be different from those of their European homelands, so too the Western settlers believed their conditions to be peculiar to their own unique experiences. We shall see, however, that this was only partly true.

The American pioneers who moved progressively westward from the 1790's on experienced many of the same threats to their health that pioneers have always faced: new infections to which immunity had to be built up, injuries, malnutrition, poor sanitation and similar hardships. There were some conditions, however, in these predominantly 19th century migrations that were not present in previous times. The numbers and rapidity of settlement were greater and the technological developments in power, transportation, farming and building all had pronounced impact on disease conditions and medical practice, as indeed they did on all spheres of life.

What made the Western situation different was the amount of disease, its differing epidemic characteristics and the conditions under which it had to be borne. The historical epidemiology of health and disease on the frontier varied according to the factors determining the incidence and spread of any disease: time, season, climate, geographical location, crowding, sanitary conditions, and other similar physical and social factors. When speaking of disease in the West, then, one is limited in generalizations and conclusions by many things. There was no single disease, or group of diseases, that was entirely typical of the frontier or of pioneers. Some illnesses, such as malaria and scurvy, were widespread. Others, such as milksickness, were more local.

The frontiersmen, hardy as many of them were, nevertheless were subject to the usual accidents and injuries of an active life. Travel reports and diaries of the pioneers are full of accounts of major and minor accidents. Land clearing was not without its hazards. An improperly felled tree crushed more than one body or limb. The lack of surgeons and, even if surgeons did treat an injury, the lack of good antiseptic technique led to frequent amputation and to many postoperative infections. These latter could themselves be fatal at worst or very debilitating at best. And it should be said at the outset that many of the health problems afflicting the pioneers were of a distinctly debilitating nature. Illness and prolonged convalescence are difficult in the best of modern circumstances. For active frontiersmen, whose daily hard physical work was essential for survival, this often meant failure.

Certain groups of pioneers were subjected to hazards peculiar to their mode of travel or their chosen work. The miners in California, for instance, suffered innumerable injuries in open faced mining shafts, as well as from the violence rampant in some mining communities. The Indians were a constant threat, especially on the great plains and prairies. One of the earliest

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American medical journals carried a very serious article entitled, "On the management of a scalped head."

Diet in Pioneer Life

To provide sufficient daily food was a problem for most travelers and for many people already settled on the frontier. Dietary deficiency and the resistance to infections is still a topic of investigation. That severely deficient diets led to lowering the resistance, whatever that vague phrase may really mean, and to actual disease such as scurvy there is no doubt. The more subtle factors involved in diet and health are not pertinent here. The pioneers believed that many of their woes were caused by improper cooking and choice of foods. We still hear patients ascribing some of their ills to things they did or did not eat, a tradition that goes back to the Greeks.

John Woods, an English farmer who settled in the Illinois country around 1820, pointed out that although much sickness prevailed among the American settlers, the Europeans generally enjoyed good health. His explanation was that the Americans ate but two meals a day and sometimes only one, while the Europeans ate regularly three times a day. His evidence, one should hasten to add, was very skimpy, but the idea of trying to correlate eating habits of various immigrant groups to their levels of health and disease is intriguing.

Sometimes a forced change of diet led to severe intestinal disturbances. Whether a bacterial infection in our modern terms would be implicated here is not clear. But the travelers' accounts leave no doubt as to their own cause and effect reasoning: "The sudden and entire change from flesh to fish affected us all more or less, with diarrhea and pain in the abdomen. . . . " This note in the diary from the Oregon journey of John K. Townsend is typical. When the fish involved was salmon, the high fat and oil content was usually blamed for loosening the bowels. But it was not only the fatty foods that caused problems. Numerous observers of the Western scene pointed to the preparation of food as the greatest tax on the digestive powers. A military physician, writing on the causes of the prevalent diseases of the Western states in *The Maryland Medical and Surgical Journal* in 1842 charged that:

"The frying pan is the chief kitchen-implement and lard the most abundant material. Every meal, breakfast, dinner, and supper is a fry; . . . My own experience convinces me that the great influence of the prevailing diet upon the general health of the west is much over-looked, and that, a change in the culinary habits of the people, a substitution of the pot and the gridiron for the frying-pan and water for lard, would contribute more to the comfort and prosperity of the people than is at first apparent."

Thus the dietary habits were thought to lead to much ill health and to many cases of dyspepsia, called by some the typical American disease.

The Most Common Symptom

While the ague, discussed below, was the most common disease on the frontier, diarrhea must have been the most common symptom. This debilitating condition, which in the large Eastern cities killed scores of infants every summer under the name cholera infantum, occurred as often on mountain trails as on the plains. In the East the unsanitary streets and crowded tenements led to a wildfire spread of intestinal diseases, but the West had its sanitary problems as well. Everett Dick, the noted historian of pioneer life, described Lawrence, Kansas in the 1850's as "one vast hospital of sick people. Cholera, typhoid fever, the ague, pneumonia, pleurisy, small pox, and other diseases swept scores of people into eternity." In the absence of wells, which especially were lacking in the newly settled areas, water had to be obtained from springs, sloughs or waterholes, all too frequently contaminated and ready to spread their death dealing germs.

One form of diarrheal disease was the most dreaded of all—cholera, which swept through the country in epidemics in 1832, 1849 and 1866. Also known as Asiatic cholera or cholera morbus, this food-borne and waterborne bacterial disease caused great fear and panic because it was associated with the worst possible characteristics of any epidemic disease: it affected large numbers, struck extremely rapidly and caused many deaths, and the doctors really could do very little for the poor sufferers. Literature is replete with stories describing a man healthy in the morning who was in the throes of abdominal spasms with watery diarrhea leading to dehydration and prostration by evening. Soon thereafter he might be ready for burial. Even that final rite too often had to be in a ditch with dozens of his unfortunate fellow victims.

"Rain follows the plow" was a common belief on the Great Plains in the 19th century. But as

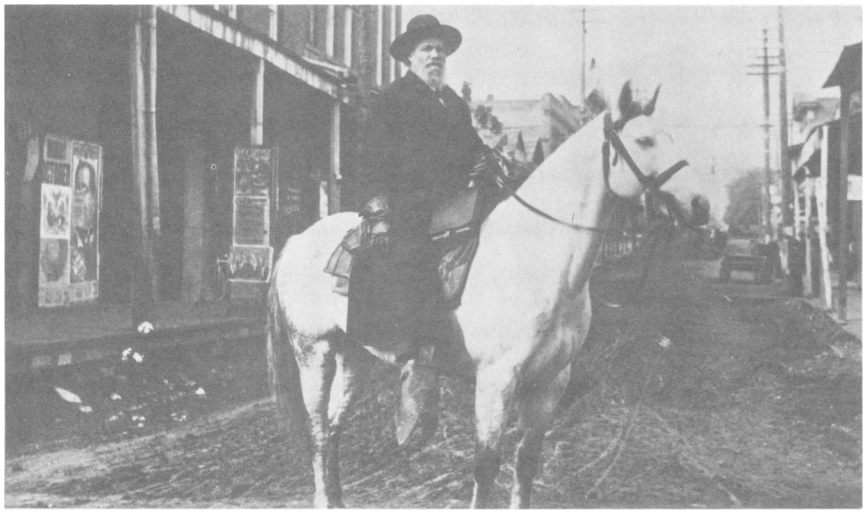

Figure 1.—Frontier physicians could spread their services more widely by circuit riding. Such hard working doctors were often away from their homes for a week or two at a time, equipped with what medicines and appliances they could carry in their saddle bags. (This photograph of Dr. Daniel Ream of Siskiyou County, California, was supplied through the courtesy of the Siskiyou County Museum, Yreka.)

rain followed the plow so did one of the most prevalent diseases the pioneers encountered—malaria, or the ague. The disease was so common that many travelers and physicians reported that often people did not even consider it as illness. "He ain't sick," the saying went, "he's just got the ager." The term malaria (literally *mal aria* or bad air) relates to its supposed origin from air filled with miasms. Since the disease reached its greatest prevalence in the fall it was also known as autumnal fever. The British term (also commonly used by Americans) was ague or fever and ague. "Chills and fever" or "the shakes" were more descriptive and popular ways of referring to this very widespread malady.

Malaria on the Frontier

Malaria is an infectious disease with intermittent symptoms, hence its common name of intermittent fever. The disease more often debilitates rather than kills its victims. In patients with repeated attacks there usually are great weakness and depression, and enlargement of the spleen in the acute phase. The economic and social consequences to those who had to do hard physical work and to protect themselves from the elements or the Indians are obvious. Those who contracted the disease while traveling were equally unfortunate.

Among doctors and laymen of the 19th century, who before very late in the century knew nothing of the parasitic cause or the mosquito spread of the disease, the miasmatic doctrine of its origin was by far the most commonly held. According to this theory the ague, and many other infectious diseases as well, was caused by decaying organic matter that poisoned the air with a noxious effluvium. Watering the land was believed to increase the formation of miasms, a belief not without foundation as we now know, because mosquito larvae breed in collections of still water.

Many observers, such as Fortescue Cuming early in the 19th century, noted that the residents along the banks of the Mississippi, where overflow with resulting stagnant water was common, had annual attacks of ague leaving the sufferers weak and sallow in complexion. While Cuming's description in 1810 is not as clear and precise in its diagnostic labels as we might want today, it nevertheless graphically portrayed the problem:

"On the subsiding of the waters, the sickly season commences, and lasts with little variation from July to October, inclusive. This is more or less the case over the whole territory, particularly on the banks of the Mississippi, and in the neighborhood of swamps and stagnant ponds. The driest seasons are the most unhealthy. The prevailing malady is a fever of the intermittent species, sometimes accompanied by ague, and sometimes not. It is rarely fatal in itself, but its consequences are dreadful, as it frequently lasts five or six months in defiance of medicine, and leaves the patient in so relaxed and debilitated a state, that he never after regains the strength he had lost. It also frequently terminates in jaundice or dropsy which sometime prove fatal.

"All newcomers are subject to what is called seasoning, after which, though they may be annually attacked by this scourge of climate, it rarely confines them longer than a few days."

Dr. John C. Gunn in his widely used home

medical adviser, *Domestic Medicine,* clearly described for his readers the course of acute malaria. There are three stages to the attack, Gunn explained, cold, hot and sweating.

"In the first there is much yawning and stretching, the feet and hands become cold, the skin looks shriveled, you seem to lose the use of your limbs by weakness, your pulse is small and frequent, you dislike to move, and finally take a chill succeeded by a cold shake. This shake continues about ten or fifteen minutes, according to the severity of the attack. In the second stage, as the chill and shaking go off, a pain in the head and back comes on, succeeded by flushings of heat and thirst, and desiring that the covering be removed that you may feel the cool air. Your face is red, your skin dry, your pulse becomes regular, hard and full. In severe attacks, where the blood determines to the head, I have frequently known delirium for a time. In the commencement of the third and last stage, the intense heat begins to subside, moisture begins to break out on the forehead gradually extending itself over the whole body, the fever abates, thirst diminishes, breathing becomes free and full, desire to make water, which deposits a sediment in the urine or pot; you then feel considerably relieved as the sweat increases, which soon restores you to your usual feelings and sensations except great weakness and extreme prostration of strength."

Obviously then, this very common malady took a terrific social, economic and physical toll, especially when one keeps in mind that the above description was of but a single attack. Depending upon which of several malarial parasites caused the infection, the patient went through these paroxysms every 24, 48 or 72 hours. The quotidian variety, with chills every 24 hours was the most common, recurrences occurring over a period of weeks if not aborted by quinine.

An Underreported Disease

Paradoxically, malaria was probably an underreported disease despite its wide prevalence. For one thing it was so common as to escape any special notice. The disease strikes small children very frequently, though in the previous century there was still current the mistaken notion that only adults were afflicted. The many clinical and lay terms applied to malaria—such as intermittent, remittent, remittent bilious, congestive, tertian, quartan and quotidian fevers—were bound to cause confusion. From the point of view of business and promotion of an area there was also reason to play down any epidemic disease. The purported report from Wisconsin that the place was so healthy that a few men had to be killed in order to start a cemetery describes this attitude very well. The truth is that throughout much of the Midwest malaria actually determined the daily habits of the people: ministers scheduled preaching to avoid their shakes and courts avoided the sick days of the litigants or the justices.

Figure 2.—An advertisement for a saddle bag designed to carry medical supplies and surgical instruments (from "The Swamp Physician," *Ohio State Medical Journal,* May 1976. Photograph by Robert Packo).

While all travelers knew that the ague, or the fever as they called it, was *the* disease of the Mississippi River Valley, it was also an important health factor in California. It was probably brought to the state by fur trappers who had become infected in an Oregon epidemic of 1829 and 1830. The disease was well established in California before the forty-niners came in such large numbers, and it continued to be present and to flare up in local epidemics through the rest of the century. The secretary of the California State

Board of Health reported in 1875 that malarial fevers and consumption were the most prevalent forms of disease.

The American experience with malaria confirms the fact that a high incidence of malaria did not immediately follow settlement of a region. Only after a few years, or even decades, did the disease present a problem. Erwin Ackerknecht, the foremost historian of malaria in the Midwest, has called this phenomenon an epidemiological latency period. One important judgment that the concept of latency period affords us is to be able to distinguish between a moving and a stationary frontier, using the evidence of sickness statistics.

Colonization of the American continent helped spread most diseases. Malaria was probably originally imported with Negro slaves, but White colonization spread it rapidly. Haphazard clearing of trees, for instance, allowing sunlight to reach previously nonexistent or shaded pools of water was important, and the early housing of the Western settlers, unbeknown to them, was ideally suited to the unwelcome but ever-present mosquitoes. Most of the malaria transmitting types of mosquitoes thrive in dark, moist, warm habitats —just the conditions provided by a log cabin. As housing improved, malaria decreased.

Malaria disappeared from the upper Mississippi River Valley before any conscious antimalarial measures such as screening were instituted. Ackerknecht cites several factors, stressing that no one reason can be singled out. The coming of railroads was important because less reliance on water transportation resulted in a shift of settlements from the bottom lands of high mosquito density to the healthier uplands. As settlements grew and prospered, livestock herds grew, and since mosquitoes much prefer cows to men the chances for malaria passage were reduced.

Typhoid Fever Increases

There is evidence that around the middle of the last century typhoid fever gradually replaced malaria as the prevalent disease of the Midwest. Typhoid is a severe intestinal disease caused by a bacterium that is readily spread by flies, food, fingers and water. It was an ever-present threat wherever sanitation was lax, that is to say in most communities and settlements. Until proper sewage disposal was instituted and clean water made available, diarrheal complaints were routine. Some of these doubtless were due to typhoid, or continued fever as it was often called. Not until 1836 did Dr. William Gerhard, a Paris trained physician of Philadelphia, clearly differentiate between the louse-borne disease typhus fever, also called ship fever or jail fever, and typhoid fever. The latter disease could be found in the gold rush mining camps, along the trail, as well as in the large cities of the East or the new towns of the frontier.

Scurvy, ever the bane of travelers, was no less a problem in the great migration to the American West. Now known to be caused by vitamin C deficiency, the disease comes on slowly when the diet is deficient in natural sources of the vitamin, especially fresh fruits and vegetables. During much of the migratory period travel was slow and food preservation not yet sufficiently advanced. Among the forty-niners the disease was especially prone to appear when they first tried to do hard physical work upon reaching the mines after the long water or overland journey.

Scurvy was often confused with rheumatism because muscle weakness and pain were common symptoms. Late manifestations, appearing after 150 to 200 days of vitamin deficiency, included skin lesions, swollen gums, swelling of the limbs and anemia. The disease, as is apparent from the list of signs and symptoms, causes severe lethargy, in itself very serious. The emigrants usually made some provisions against scurvy on the trip west, but too often these were insufficient. The settlers knew which roots or fruits were good antiscorbutics. Service berries or June berries, for instance, were abundant in some areas. These we now know are rich sources of vitamin C.

One apparently common health problem of women, rarely discussed in the travel journals and diaries, was prolapse of the uterus. Dr. William M. Wood of the United States Navy, previously quoted on the evils of the frying pan, told his colleagues that this condition ". . . among the women of the new states, presents itself to an extent so shocking as to indicate some sectional causes. So numerous are the cases that a pessary, with those who use it, is almost as essential an appendage of a doctor's saddle bags as a pill box." Wood ascribed the frequency of uterine prolapse to the conduct of labor in childbirth and the subsequent medical management of the new mother. "It is a matter of religious vigilance," the outraged Dr. Wood continued, "during the progress of labor, to harass the patient by all manner of savage and violent aid . . . and by no manner or means permitting her to remain quiet in bed."

Where no physicians were available, as in isolated settlements or in the backwoods or on the trail, Wood blamed the barbarous practices on "old women" who managed the labor process. This harsh judgment should certainly not be applied to all the many midwives who did much creditable obstetric work throughout the frontier country.

As to psychological problems, the types and extent of these disorders among the pioneers are difficult to describe and to measure. The active habits of our countrymen, one observer wrote, made hypochondria much rarer than in Great Britain. One recent writer has drawn attention to the unimaginable solitude of the early West. The extent of its havoc is glimpsed in a few diaries, but the real toll is yet to be measured with any real precision.

One of the diseases encountered by the pioneers was truly a frontier disorder, the awesome and bewildering milksickness. Often called milksick, or by even more descriptive names such as puking fever, swamp sickness, the tires, the slows or the trembles, this affliction of man and cattle was widely prevalent in the states of the upper South and the Midwest. Reports from colonial times to the 1960's may be found in the medical literature, and many family tragedies resulted from this poorly understood disease.

The Cause of Milksickness

We now know that milksickness is due to poisoning with tremetol, the toxic ingredient of white snakeroot and rayless goldenrod. The disease occurs after cows eat the leaves or stems of the white snakeroot plant and when man then eats butter or drinks milk from the poisoned animals. Exact figures are not obtainable, but the incidence of disease and death from this cause in 18th century and 19th century America was great. It was especially prevalent in dry seasons when cattle strayed from their pastures into neighboring woods. In newly cleared areas without fenced pasturelands the disease was more likely to occur than in more settled regions with fences. Another important epidemologic point is that the toxin in raw milk must reach fairly high concentrations to do its damage to human consumers. In rural areas where heavy consumption of raw milk from single cows or a small herd was common, the disease was likely to hit entire families. In more populous areas, where milk from several sources was pooled, the toxin was diluted, hence less harmful.

The disease is directly related to the dose of toxin absorbed. Severe acid-base disturbances could lead to death within a few days. Such was the plight of the community of Pigeon Creek in Indiana when Nancy Hanks Lincoln died of milksickness in 1818 when her son Abraham was a boy of 9. Mrs. Lincoln's great aunt and uncle and two neighbors died shortly after her. Though Nancy Hanks Lincoln may have been the most prominent historical figure to die of milksickness on the frontier, she was by no means the only one. Those lucky enough to recover after an illness characterized by loss of appetite, weakness, muscle pain and stiffness, severe vomiting and constipation, were often left to a slow recovery with much lethargy. This feature gave it the name sloes or slows.

Finally it should be said again that other diseases such as diphtheria, smallpox, tuberculosis, erysipelas and various skin disorders, were as prevalent in the West as they were in the East. In fact, a significant number of emigrants came west in search of health. The lands beyond the Missouri were supposed to be rich as well as invigorating. An outdoor existence in the mountains of Colorado certainly proved beneficial for some consumptives, but they soon encountered numerous other threats to their health. While preservation of good health was but one of many problems faced by the pioneers, it was an overriding one. Without health all else might be lost. And, unfortunately, in most instances, 19th century Americans had little direct control over disease and its prevention.

Much of the treatment of disease was left to family members who relied on innate wisdom and the help of a variety of do-it-yourself home medical advisers. As Mark Twain recalled it in his autobiography, "Doctors were not called in cases of ordinary illness; the family grandmother attended to those." The frontier doctor, at any rate, rarely could rely on the income from his practice to make ends meet. Only after establishing himself solidly and only after his patients themselves had become economically self-sufficient, could the doctor expect to make a decent living from medicine.

A Variety of Doctors

Many men practiced many different brands of medicine or followed various doctrines regarding diseases and cures. That many practiced who were not properly educated to the profession was

true throughout the country. Licensing laws were repealed in most states by the middle of the 19th century. Pretty much anyone who called himself doctor could function as one. In the new settlements many men held life and limb in their hands with little more than good intention to go on. Sometimes the title of doctor was thrust upon those who, by virtue of good common sense and a bit more education than their fellows, sounded and looked like doctors. The experience of one pious New Englander, Estwick Evans (who was born in 1787) must have been very common. While traveling on the Ohio River, he wrote, the boatmen, who frequently became sick with fevers, applied to him for medical aid: " . . . and hence I acquired the title of Doctor. My prescriptions were always simple; and, strange to tell, I did not lose a single patient. . . . I always told the sick, that in a few days, they would be perfectly well." Evans was a firm believer in nature's power to cure. In this he was in the best company, for by midcentury a movement toward a less heroic form of treating, without bleeding, purging and blistering, was well under way.

Where doctors were unavailable their writings were not. The home medical adviser, usually a book written for the public in nontechnical language by a physician, was among the standard equipment of most pioneer wagons or pack trains. These guides began to be published with increasing frequency from the 17th century on. John Wesley was as widely known for his *Primitive Physick* as he was for his particular brand of Christianity.

The titles of some of those do-it-yourself medical books plainly indicate their intentions. An early 19th century example was Alexander Thomson's *The Family Physician; or, Domestic Medical Friend: Containing Plain and Practical Instructions for the Prevention and Cure of Diseases*. Another was *House Surgeon and Physician; Designed to Assist Heads of Families, Travellers, and Sea Faring People*. An English book of the late 18th century that went through numerous editions and dozens of reprintings in this country was William Buchan's *Domestic Medicine*. The later editions even included sections dealing with the care of livestock.

Which of these many domestic medical guides was the best or the most popular is hard to gauge. Certainly a prominent candidate would have to be Gunn's *Domestic Medicine, or Poor Man's Friend,* written by Dr. John C. Gunn of Virginia and Tennessee in 1830. A conservative estimate is that the early editions in the 1830's sold over 100,000 copies. By the 1860's it was much enlarged and still going strong, a best seller by any standard.

Dr. Gunn was convinced that medical knowledge need not be esoteric, that the time had come when all the technical language of medicine should be made plain to the people. He aimed his book at the unlearned. They needed instruction to help them live healthier lives and to avoid the many schemes and medicines of the quacks that abounded. Gunn's rules for health were simple: exercise, temperance and cleanliness.

How the pioneer physician actually practiced his profession and what modes of therapy he prescribed depended on his training, on his allegiance to the so-called regular profession or to one of the numerous medical sects, and on the availability of medical supplies. Some generalizations can be made. Since fevers were very common, some form of depletion therapy was usually used. Bloodletting was especially popular until the Civil War years. Several ounces to a pint or two might be let at one time by cutting into a vein or scarifying the skin. Leeches did the job more slowly. The theory was that a vascular fullness existed at the onset of an illness. This had to be reduced before any drug therapy could be effective.

Therapy Based on Humoral Theory

In a similar way emetics and strong purges were used. All this therapy was based on the age-old humoral theory of disease. Blood, yellow bile, black bile and phlegm were the four humors of Greek antiquity. These combined in hot, cold, moist and dry combinations. If the humors were unbalanced or in the wrong location within the body they might be favorably affected by release through the intestinal tract or via the blood vessels. By a theory of opposites, treatment was directed to cool those diseases deemed to be hot, dry those with excess moisture and the reverse.

The most commonly used purge was mercurous chloride, better known as calomel. Nineteenth century doctors believed that in addition to acting as a cathartic, calomel modified the secretion of the liver. That organ was believed to be sluggish in most fevers and in spring time.

To illustrate therapeutic concepts and their vagueness, witness what a physician writing on the "Modus Operandi of Calomel" in the *Western*

Journal of Medical and Physical Sciences in 1833 had to say: "When given in large doses, besides its primary action on the bowels, it produces its specific effects on the general system, called the mercurial impression: and this, whatever may be its nature, seems more especially to affect the capillary vessels, and the receiving and absorbing systems. By exerting the action of these parts, it has a tendency to equalize the general circulation, restore secretions, overcome local congestion, inflammations, etc."

We now know that there was some justification for thinking that calomel acts on a sluggish liver. Calomel causes a greenish stool, *not* because it stimulates an increased bile flow from the liver, but because mercury, acting as a mild antiseptic, interferes with the intestinal bacteria that are necessary to convert the stools to their normal color by acting on the bile pigments being excreted. Calomel also causes salivation, and when given for too long a period or in excess causes bone damage and teeth to loosen and actually drop out. The salivation was thought to assist in ridding the body of bad humors.

A typical picture of an early 19th century American practitioner is one drawn by J. Fenimore Cooper. In his novel *The Pioneers,* Cooper portrayed frontier life in the 1790's. As such it is one of the first and most useful novels for our purpose. One of Cooper's characters is the young physician of formidable stature, Dr. Elnathan Todd. Elnathan, a sickly lad, took to doctoring because it was believed to be an easier calling than farming. After an apprenticeship with a local doctor and a very brief sojourn in the hospital at Boston, the young man was ready to minister to the ills of an upstate New York frontier village. Elnathan, Cooper tells us, " . . . had acquired a certain degree of knowledge in fevers and agues, and could talk with much judgement concerning intermittents, remittents, tertians, quotidians, etc. In certain cutaneous disorders very prevalent in new settlements he was considered to be infallible. . . . " Dr. Todd's surgical skills were perhaps questionable, but then what newly independent physician's were not?

As Cooper noted, Dr. Todd's " . . . reputation was hourly increasing, and, luckily for his patients, his information also." The descriptions of his ministrations to the victims of a gunshot wound vividly pictured a scene that must have been reenacted countless times in the 100 years to follow. Dr. Todd carefully emptied the contents of his saddle bags and surgical case in preparation for dressing the wound. There were various phials filled with radiant colored fluids arranged on the table by the side of "murderous" saws, knives and scissors, all with due effect on the audience. The doctor then successfully extracted a large shot from his patient's leg.

This scene and the actors in it were typical of 19th century frontier medicine. Dr. Todd's training, or lack of it, and his empirical skills also exemplify most doctors of a century ago. Many areas in the West suffered from a lack of physicians, qualified or unqualified. From the 1830's on, some Western medical schools were founded in order to increase the number of available doctors. Along with numerous other reports, that of S. H. Long's expedition to Arkansas related that "Among recent settlers, the want of the most common comforts, of the advice and attendance of skillfull physicians, and, above all, the want of cleanliness, and the destructive habits of intemperance, are causes operating powerfully to produce and aggravate . . . diseases."

Medical Circuit Riders

One means by which doctors could spread their services more widely was by circuit riding (Figure 1). Lawyers and preachers also carried out their duties in this fashion. The hard working medical circuit riders were away from their homes for a week or two at a time, living with their patients en route. Gathering herbs along the trail and equipped with what medicines and appliances they could carry in saddle bags (Figure 2), these were among the earliest pioneer doctors in the West. When roads improved and railroads were built consultation became easier. With the advent of the telephone, circuit riding was no longer necessary.

Much research still needs to be done to determine with any degree of accuracy how many physicians practiced at any given time in urban as well as in rural areas. Just what an average patient could expect in his encounter with a physician has not been fully elucidated by any means either. In honoring the work of these early Western physicians, it seems fitting to recall not the exploits of the few who achieved fame, such as Ephraim McDowell, William Beaumont and Daniel Drake, but the countless numbers who bore the harsh burdens of pioneer life along with their fellow Americans. While there was toil and turmoil aplenty, optimism and a sense of the future was every bit as prevalent.